

1 Location of Northampton

1 2 3 4 Miles

-  Existing Town over 40,000
-  Motorways Completed
-  Motorways Proposed
-  Trunk Roads Improvement Proposed
-  South East Study Boundary
-  South-East Study Proposals
-  New Cities
-  Big New Expansions
-  Other Expansions

100 100
100 100
100 100

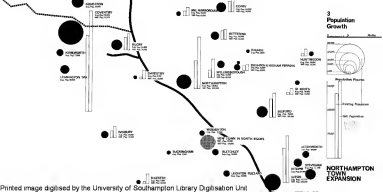
**NORTHAMPTON
TOWN
EXPANSION**

2 Regional Relationships

Legend

- Existing Network
- Proposed Network
- Area of Study Boundary
- Area Ties to Study Area (Not Investigated Area)

NORTHAMPTON
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4 Area of Search

1 2 3 4 5 Miles

- Highways
- Area of Search Boundary
- County Boundary
- State Boundary
- Water
- County Seat Map Sites

Figure 4

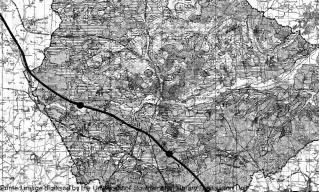
NORTHAMPTON
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5 Topography

0 1 2 Kilgms



**NORTHAMPTON
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6 Geology



- Recent
- Alluvium
- River Terrace
- Pleistocene
- Boulder Clay
- Glacial Till and Gravel
- Archaean
- Great Oolite Series
- Lower Oolite Series
- Devonian
- Middle Lake

**NORTHAMPTON
TOWN
EXPANSION**

Some lines are thickened by the Engineering Department for emphasis.

Agricultural Land Values

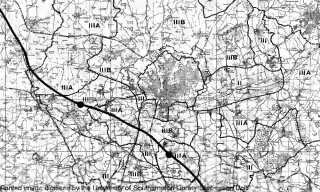
0 1 2 Miles

Analysis of Agricultural Land Classification

- I High Quality
- IIA Amod. Soils
- IIB Average
- IIIB Basic Soils
- IIIA Area of North Boundary
- IIIB Area of South Boundary
- IIII Railway

0 1 2 Miles

**NORTHAMPTON
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Communications



NORTHAMPTON TOWN EXPANSION

8 Service Lines

0 1 2 Miles

-  Highway
-  Boundary
-  Water Station
-  Municipal Building Station
-  Existing Water Lines
-  Proposed Water Lines
-  Gas
-  Gas Main
-  Existing Natural Gas
-  Proposed Natural Gas
-  Sewer
-  Sewer
-  Existing Sewer
-  Proposed Sewer
-  Sewer Station
-  Sewer Station
-  Sewer Station

**NORTHAMPTON
TOWN
EXPANSION**

II Assessment and Opportunities



NORTHAMPTON TOWN EXPANSION

12
Basic
Plan—Diagram 1961

0 1/2 Miles

- New Residential Area
- New Employment Area
- Open Space
- Old Town Area
- Expansion Boundary
- Existing Residential Area
- Existing Employment Area
- Existing Open Space
- Urban Landscape Area
- Natural
- Main Water
- River
- Street Works
- Aqueduct
- Sewer
- Railway

Source:
L.P.

NORTHAMPTON
TOWN
EXPANSION

13
Designation Area

0 1 2 Miles

■ Built-up Areas
— Designation Boundary
--- County Council Boundary

1:10

NORTHAMPTON
TOWN
EXPANSION

Introduction and Summary

1. This report is the first part of a study for the expansion of Northampton proposed by the Minister of Housing and Local Government in his statement of February 3rd, 1965 (Hansard 1074-1081), and is based on terms of reference including the following items:

- (a) To study, report and make recommendations to the Minister on the area in the vicinity of Northampton (and including Northampton County Borough), which might be designated under Section 1 of the New Towns Act 1946, for the purposes of the expansion.
- (b) The work will involve an examination of the existing structure, resources, population, employment, communications, service importance and of the renewal, economic and physical possibilities of Northampton in order to establish its role in relation to a substantial expansion of population.
- (c) A similar examination will be made of the area of search (map 4) to consider in the light of the conclusions of the Study of Northampton itself, various locations and forms of the large-scale development required for the expansion up to 1981, assuming a planned intake of 70,000 people by that date, plus their own natural increase and the natural growth of the existing population of Northampton. Indications will be given of how development may proceed to allow the town to continue building for its own natural growth for about twenty years after planned immigration has ceased in 1981, either by the further expansion and renewal of Northampton or at other points in and around the sub-region.
- (d) The study will include an assessment of the potential for village and small town expansion, special recreational areas, regional parks, etc. In particular, the impact of such a population increase will be studied in relation to areas of high amenity value, and to the steps necessary to preserve them and to enhance their value for recreation.
- (e) These studies will form the basis for the recommendations for designation and for the subsequent work on the basic plan for Greater Northampton. They will also enable conclusions to be drawn on the proposed rate of population increase, and on a "rolling programme" for the development of highway and other engineering services.
- (f) Throughout, account will be taken of the overall strategy of the Government in relation to the South East of England.
- (g) Throughout both parts of the commission, account should be taken of the social implications of the proposals and with the help of the Institute of Community Studies, relevant sociological information will be gathered to help guide both the recommendations on designation and the more detailed proposals of the basic plan.
- (h) The client for part I of the Study will be the Minister and for part II the Northampton County Borough Council and the Minister jointly.
- (i) It is, however, the Minister's intention to transfer his interest in part II to a Development Corporation established under the New Towns Act 1946 if and when such a Corporation is appointed.



- (j) The report on part II comprising the draft basic plan for the Greater Northampton will be submitted to the Northampton County Borough Council and the Minister (or Development Corporation) not later than 1st June, 1967.
2. The report is in three sections. In Part A, the expansion at Northampton is related to the proposals included in the South East Study and placed in the physical and economic context of the region. Reference is also made to the relevant findings of the Northampton, Bedford and North Bucks Study. Then follows a brief analysis of expansion policies and possibilities concluding with a decision to concentrate attention on forms of lineal growth to the east and south of Northampton related to topography, landscape quality and the economic importance of regional lines of communication between existing and potential areas of population concentration.
3. Part B contains a survey of the Search Area and the County Borough with the purpose of determining possible areas within which a pattern of growth could be organised.
4. In Part C the survey material is reviewed in the context of the preferred directions of lineal growth suggested in Part A and an area is recommended for designation based upon the land-use needs generated by the population projections for the expansion. These give a total population of 222,000 by 1981, including the existing population of the County Borough of 120,000, its own natural increase of 19,000, the immigrant population of 70,000 and its natural increase of 13,000. In addition the existing villages included in the area have a total population of 10,213. Natural growth alone will bring the population up to about 300,000 by the year 2000. Justification is made for the recommended Designated Area of 23,615 acres, which extends to the east to Sywell reservoir and to the south to the line of the M1 motorway (map 13). This area includes 10,241 acres comprising the existing County Borough of Northampton.

Part A: Regional Context and Expansion Possibilities

1. South East Study

5. In March, 1964, the Ministry of Housing and Local Government published the South East Study; this forecast that there would be a population increase of three and a half million in the South East by 1981. Of this about two and a half million will be the natural increase, or excess of births over deaths, of the present population, while the remaining one million will be by migration from various sources caused by the larger rate of the growth of new jobs created in the South East than in other parts of the country.

6. Later estimates have readjusted these proportions, but the total figure is approximately the same.

7. Of this three and a half million population increase, two million will be accommodated by the normal planning processes as part of the natural growth of towns in the region, and one and a half million will be provided for in a programme of three new cities and a number of planned town expansions.

2. Relationship to the Region

8. Considerable natural and overspill growth is being provided in the towns around Northampton (map 3). At Daventry, twelve miles to the west, it is proposed to accept 30,000 overspill from the Birmingham area to give a total population of about 48,000. Corby New Town, twenty miles to the north, will grow to about 85,000 by the end of the century; Bedford, twenty miles to the south east, to about 100,000 by 1981 and Peterborough, thirty five miles to the north east, to about 170,000 by 1981. In addition, it was announced during March, 1966, that Wellingborough, ten miles to the east, had entered into an agreement with the Greater London Council to accept 30,000 people from the London area to bring its population up to a total of about 80,000 by 1981. The Minister of Housing and Local Government has published the Draft Designation Order for a new city, fifteen miles to the south, near Bletchley, which is planned to grow by 70,000 population at 1981 and thereafter by 150,000 at the end of the century.

9. Coventry with 316,000 population is thirty two miles to the west, Rugby, 55,000, is twenty one miles to the west, Leicester, 267,000, is thirty three miles to the north, Luton, 150,000, is thirty five miles to the south east, Birmingham is fifty miles to the north west and London is sixty five miles to the south east (map 1).

10. Northampton is set midway between the two major conurbations of London and Birmingham on national lines of road and rail communication. It is located on a loop from the newly electrified railway line from London to Manchester and Liverpool. Journeys to London take on average 1 hour 19 minutes and operate hourly throughout the day. The town is four miles from the M1 motorway, and about twenty miles from the M1 junction with the M6 Midlands link. It is readily accessible to the markets of the South and Midlands, to major manufacturing and administrative centres and to the ports on the south and east coasts. It thus has a high attraction for both industry and population. By the

early 1970s it will be centrally located on a motorway system having direct access to every major city in England.

11. In addition, a suggestion has been made by the County Surveyors Association to continue the M6 Midland link eastwards, about eight miles north of Northampton, to connect the industrial Midlands with East Anglia and the North Sea continental ports. In the South East Study (Chapter 13, paragraph 18) a new connection was suggested from Southampton to the West Midlands, probably linking with Coventry.

3. The Northampton, Bedford and North Bucks Study

12. In a feasibility study of population growth in this area carried out in the autumn of 1964 for the Ministry of Housing and Local Government (Northampton, Bedford and North Bucks Study—An assessment of inter-related growth) we stated that the expansion of Northampton was feasible for the population increase suggested in the South East Study, namely, 50,000 by 1981 and a further 50,000 by the end of the century, including natural increase in both cases. We said that there should be no problem in providing suitable employment opportunities for these populations and that areas in the south east and south west of the town could prove suitable sites for expansion.

13. The present study is based upon a population intake of 70,000 by 1981 plus its own natural increase: thus the population growth of Northampton has been increased from 100,000 by the end of the century as stated in the South East Study to about 180,000. There will be no difficulty in accommodating this increased population and it is unlikely that there would be any problem in providing employment, subject, of course, to Government controls. Proposals for additional sites to the east of the town will be put forward later in this report for the population that has to be accommodated over and above the increase considered in our earlier study.

14. In addition, the present study also involves consideration of the way in which development of the town may continue to provide for natural growth for twenty years after planned immigration has ceased in 1981. It is, of course, possible that there may also be a need for further immigration into the area after 1981. This was dealt with at greater length in Chapter 5 of the Northampton, Bedford and North Bucks Study, and it is now proposed that the planning strategy for the expansion of Northampton should allow for the possibility of further long-term growth.

15. Northampton was originally selected for expansion because it satisfied many of the criteria suggested in the South East Study for determining towns suitable for expansion. Some of these were:

- (a) large existing commercial centres likely to be able to attract and to provide the necessary facilities for offices on a considerable scale as soon as possible.
- (b) towns with a potential for growth of existing industries—in order to minimise the amount of new industry which would need to be moved to support population growth.
- (c) towns able to provide for the requirements of large industrial units.
- (d) towns with good communications, sufficiently far from London to discourage commuting but not too far to discourage relocating industries.
- (e) large towns having a labour pool in which a good proportion of employment falls within quickly expanding industrial groups.
- (f) towns with physical space for growth in which water supply and sewerage do not present insurmountable problems.

16. A number of advantages are gained by the adoption of a planning policy based upon the large expansion of large existing towns as advocated in the

South East Study, and these were listed in Chapter 4 paragraph 5 of the Northampton, Bedford and North Bucks Study.

17. The most important lie in the fact that existing towns possess an established character, a mature image and a full range of employment, commercial, educational and recreational facilities of some size and choice; facilities which a new town cannot hope to offer until it has been building for many years.

18. Another aspect that was put forward in the Northampton, Bedford and North Bucks Study, and is of some relevance here, is that relating to size and counter-magnetism. The South East Study proposed the concept of new cities and expanded towns of the order of 150,000–250,000 as an attempt to establish true counter-magnets to the major conurbations, strategically located to attract offices and industries on a big scale.

19. It was shown in the Northampton, Bedford and North Bucks Study that counter-magnetism can also be achieved by a group of existing towns, if they are located in a strategic position, through the process of coordinating their planned growth, to form a city region. This could readily be achieved in the Northampton area by coordinating the growth of Northampton with other towns expanding in the vicinity.

4. Northampton Expansion—Analysis of Policies and Possibilities

20. The growth at Northampton alone, giving a total population of the order of 300,000 by the end of the century, will in itself establish a major centre of the strength of Coventry, Leicester or Nottingham, as they exist today.

21. Various concepts have been investigated for the expansion of Northampton to achieve long-term growth and at the same time to lay the foundations for a major city region, as suggested above. The findings of these investigations are summarised below.

(i) *Satellite Clusters*

22. This concept would involve the creation of perhaps three to six urban areas around Northampton at a distance of about five miles from the centre. The urban areas might be located adjacent to or around existing villages or on undeveloped land. Each area would have to accept between 17,000–34,000 people by 1981 growing ultimately to 30,000–60,000 by the end of the century.

23. A number of major difficulties were experienced in applying this concept to the site:

- (a) There were not enough suitable areas for development
- (b) The spatial relationship of surrounding towns, especially on the east and south where the M1 motorway occurs does not allow easy location of satellite areas
- (c) More land would be needed for this form of expansion than for any others
- (d) There was a danger of creating satellite "dormitories" and encouraging commuting back to Northampton on a large scale. This would entail the costly improvement of a complex of roads. Inter-communication between the various satellite expansions would also be difficult.
- (e) The social problems created by dormitory satellites would be considerable and it would not be feasible to provide many of the necessary public facilities. The employment opportunities would not be so good as with other concepts or would involve long work journeys.
- (f) There would be a danger of encroaching on or destroying more true countryside and villages. The peripheral distances and hence the possibility of damage to surrounding farmland would be increased by a number of self-contained urban areas.
- (g) The plan would be more costly, more difficult to implement in physical and industrial terms, and would lack a "counter-magnet-to-London" image.

24. The cumulative effect of these difficulties resulted in the abandonment of the concept of a satellite cluster.

(ii) *Peripheral Expansion*

25. Superficially, peripheral expansion appears to be sufficiently attractive to merit close examination. On the credit side there are all the advantages to be gained by keeping the town compact, infilling and consolidating an indented periphery, keeping the town focused and equidistant from its existing centre and utilising existing services as far as possible.

26. But a study of the actual physical problems involved in peripheral expansion at Northampton demonstrates the impracticality of the concepts.

- (a) The existing town has expanded almost entirely to the north and north east of the town centre, to avoid the problems involved with reclaiming and crossing the flood plains of the river Nene to the south. Further substantial expansion in the northerly directions would be limited, due firstly, to unfavourable topography, watersheds and ironstone deposits and secondly, to the increasing difficulty that would be encountered in maintaining adequate access back to the existing town centre through the northern suburbs, a distance of some three miles on average.

This leaves areas to the east, west and south. Here, the situation is much more favourable as regards availability of suitable land, and although the access difficulty mentioned above would still be inherent in easterly or westerly growth, this could be alleviated by new routes to the town centre along the Nene valley. The areas to the south of the river, recommended in the Northampton, Bedford and North Bucks Study, for "expansion completing the concentric built-up pattern of the town", are eminently suitable, but somewhat restricted on their southern edge, by a number of rapidly expanding villages and the M1 motorway, for a population now larger than that conceived at the time of preparing the above Study.

Summarising, it is doubtful whether there are in fact enough suitable areas contiguous with the existing town for the accommodation of an additional population now estimated to be of the order of 180,000 by the end of the century.

- (b) Peripheral expansion, apart from increasing the distance to the town centre also multiplies the traffic volumes and consequent congestion on an already overloaded pattern of radial roads converging on the central area. Every additional growth period makes access to the centre more difficult.
- (c) Probably the most important disadvantage of peripheral expansion is the limit to the ultimate size of growth that is possible. The town has already virtually reached this limit on its northern edges and with the completion of a concentric pattern of growth up to the motorway on the south, there would then be a final limit to the physical size of the town.

(iii) *Linear Expansion*

27. The necessity to produce a plan that is flexible and has growth potential beyond 1981 to provide a workable solution for an urban area at least of the order of 300,000 population leads to the investigation of forms of linear growth; i.e. wide bands of development along lines of communication.

28. Some of the advantages that would be gained are as follows:

- (a) It would be possible to apply the principles of balanced land uses and a communications system evolved for linear growth over the fabric of the existing town and the new expansion. This would re-deploy traffic and so prevent unnecessary concentrations of traffic caused by the radial pattern of roads in the existing town.

- (b) The two ends of the plan would be "open" and the linear form would make possible a staged programme of growth within the plan period and further growth beyond if this should prove necessary. The form has inherent flexibility and development could be terminated prematurely or allowed to continue indefinitely but would always be a complete entity within itself at any stage.
- (c) While access back to the existing town centre increase in length, the opportunity, with linear growth, to establish new routes as part of the expansion structure and thereby new means of rapid communications, whether by private or public transport, renders the journey less arduous than a much shorter distance from an outlying suburb to the centre along existing roads.
- (d) A simple linear form would have a clearly defined edge between the built-up area and the adjoining farmland along the flanks of the development which would not be affected by further growth; this would take place only at the "open" ends. It would also be easier to effect a policy of barrier uses between the two areas since these would not be subject to future change thus obviating abortive expenditure.
- (e) Intercommunication between the various parts of the expansion and the facilities and employment opportunities offered would be easier than with either peripheral or satellite forms and would not entail the construction of any special roads for that purpose alone, the roads being part of the circulatory system of the town.

29. These investigations into town structure indicated many advantages for linear growth—especially in the fields of definition, flexibility and communication; it then became a matter of determining whether this form could be applied successfully to Northampton and if so, in which directions growth should occur. Three major factors were considered in the preliminary assessment before more detailed studies were undertaken on technical aspects. These factors were:

- (a) topography, drainage and landscape value,
- (b) major lines of communication, and
- (c) regional patterns of major population and industrial concentrations.

30. A preliminary assessment of topography and landscape value, revealed three major valley systems around Northampton; the east-west Nene river valley, the north-south Brampton valley and the valley through which the M1 motorway passes (map 5). It was determined that the linear expansion should be based on one of these valleys. The area of the Nene valley to the west of Northampton, and the M1 valley are the most mature in terms of landscape value, but the remainder of the Nene valley is also attractive. The upper part of the Brampton valley, however, is rather open and treeless, as are most of the hilltops and the area to the south east of the town (map 11). For visual containment and relationship to recreational opportunities of landscape value, either the Nene or the M1 valley should be selected.

31. It was considered that regional communications and the related pattern of towns and villages would affect the location and planning of the linear expansion in that one or more of the important traffic routes between Northampton and nearby towns should be incorporated within the plan form. Relationship to these routes would also result in the absorption of some of the areas now subject to strong building pressures thus containing the extent of urban development and conserving the countryside. Inspection of the roads radiating from Northampton eliminated the Kettering and Bedford roads as they cross high open country, and focused attention on the Market Harborough,

Wellingborough, Daventry and Bletchley roads as these are associated with the valley systems mentioned above.

32. The Market Harborough road was eliminated because the town itself is small and the road is related to the rather treeless Brampton valley. The Daventry road was given a secondary rating because of the proximity of the M1 which would curtail the amount of expansion that could be accommodated without crossing the motorway. In addition this direction is congested by a concentration of lines of communication, flood plains and built up areas. The Wellingborough road, by contrast is related to the rather attractive Nene valley and itself passes across a number of minor tributary valleys flowing into the Nene which give the area a well structured and drained topography.

33. Significant population expansions proposed for Wellingborough and Bletchley combined with the importance of these routes and their relationships to the major valley systems of the area, crystallised the final decision to investigate in greater detail the possibility of the growth of Northampton taking place in easterly and southerly directions. In other words, it seemed clear, subject only to confirmation on detailed investigation, that there were two existing and potentially important communication routes running towards other large-scale urban growths along which there could take place, the development of Northampton on the scale required and in the preferred linear form.

34. There follows an analysis of the search area in greater detail within the context of the above criteria. It eliminates much of the area of search from consideration for town expansion purposes and substantiates the suggestion for eastwards and southwards growth.

Part B: Survey of Search Area and County Borough

1. Introduction

35. The area of search (map 4) is roughly circular in shape 7-10 miles in radius and centred on the County town and County Borough of Northampton. The area lies entirely within the County of Northamptonshire and comprised seventy one parishes and the County Borough before the enlargement of the County Borough boundaries in April, 1965. It covers parts of five rural district councils, Brixworth, Daventry, Northampton, Towcester and Wellingborough and is 145,000 acres or 22.6 square miles in extent.

36. The population of the search area increased 6.7% between 1951 and 1961 when it rose from 150,000 to 160,000, including the County Borough, which, after the expansion of its boundaries in 1965, had a population estimated at 121,410.

2. Pattern of Settlements

37. The major villages in the area of search to the west of Northampton with over a thousand people, are Harpole and Bugbrooke, the latter being one of the four "key" villages selected by the County for further expansion. To the south the major villages are Hardingstone, Wootton, Blisworth and Roade, the last being another of the "key" villages. In 1961 each of the villages had over 1,000 population and had increased by about 50% between 1951 and 1961. To the east, Billing, Moulton, Earls Barton and, further to the east near Wellingborough, Bozsat and Wollaston are the major villages, but apart from the first two which during the same period also showed increases in the region of 50%, the population of the remainder stayed relatively static. Earls Barton, together with Brixworth, the only major village to the north of Northampton, complete the ring of four "key" villages.

38. It can be seen from the figures quoted above that the most rapid rates of growth occurred in villages immediately adjacent to Northampton on the east and south sides of the town, in the areas suggested for expansion in Part A of this report.

3. County Planning Policies

39. In order to meet the building pressures on these villages arising from the decision to expand Northampton the County Council Planning Department presented in June, 1965, "A Plan for Rural Development" which laid down a series of policies to cover the interim period before a plan was prepared for the town expansion.

40. Two belts were drawn around the existing County Borough boundary at distances of about two and four miles. Within the inner belt all new development should be allowed only within the confines of the villages as delineated on accompanying maps in the report. In the outer belt, reasonable natural growth would be accommodated within lines that had been delineated to enclose areas sufficient for such growth. In both belts there is a total of over 440 acres of land

in the villages that could thereby be utilised for development in the interim period.

41. In addition to the green belt and village envelope policies described above, the County also selected four key villages for further long-term expansion; Brixworth, Earls Barton, Roade and Bugbrooke, all within about four miles of the County Borough boundary (map 4). They were selected because they are all fairly large and attractive existing communities outside the area likely to be affected by the expanding town and because for the most part they satisfied criteria for villages having an established nucleus of industry, good public services, educational facilities and an expanding viable community with good communications to Northampton. It was intended that the selected villages could be expanded to cater for the majority of development, both residential and industrial, which in the past has been taking place in the immediate surroundings of Northampton. Detailed plans are now being prepared for these four key centres by the County Council.

4. History

42. The first mention of Northampton is in Saxon times, although a settlement probably existed from ancient British times.

43. In Pevsner's description of the town, he mentions that it was important in the Middle Ages. The Castle was the scene of many important meetings and there was a large religious settlement by the middle of the 13th century. Northampton received its first Charter in 1189.

44. During the Commonwealth, Northampton was a stronghold of Puritanism. The mediaeval town was largely destroyed by fire in 1675 and rebuilding began almost immediately. The new Northampton was described by Defoe as "the handsomest and best town in all this part of England".

45. By the early 18th century Northampton had become primarily a shoemaking town, but trade remained small until the opening of the Grand Junction Canal in 1815. The town almost doubled its population to 15,000 in the fifteen years following. However, the main growth of Northampton took place after the building of the railway in 1845, and by the latter half of the 19th century the population had reached 33,000 and the town had achieved County Borough status.

46. The shoe trade differs from most others in that it did not become mechanised until the late 19th century, and operated until comparatively recently in small units. As a result Northampton is still characterised by the many small factory buildings scattered over most parts of the town.

5. Growth and Land Use

47. The town is located on south facing hill slopes to the north of the river Nene, just to the east of its junction with the Brampton river. Because of the presence of these two rivers, the old town expanded to the north and east to avoid the problems involved in reclaiming or crossing the flood plains. Later growth occurred to the south and west beyond the rivers, but it was always of relatively secondary importance compared with the main growth to the north and east. Absence of development in the river valleys, permitted the railways to thread their way close by the centre of the town during the nineteenth century. As in many other towns, the river at this time became the centre for industries basing their manufacturing processes or transportation needs on water.

48. This tendency has persisted to the present day, for apart from the central area and the proliferation of small industries throughout the older residential areas, the major industries of the town have tended to be located along the low lying and hitherto under-used lands of the valleys near the existing town centre.

This concentration has contributed to the traffic congestion at journey-to-work times which has been increasing rapidly in recent years.

49. Residential areas have continued to grow outwards but mostly in a north or north easterly direction up to the County Borough boundaries. There has also been a smaller growth in a westerly direction beyond the Brampton valley and almost nothing in recent years to the south of the river Nene. The innermost and oldest residential areas are now in gradual process of clearance and renewal, while those in the next age group are currently being considered for rehabilitation.

50. Apart from a few historic and a few recent buildings, the town centre is mostly composed of late nineteenth century structures that are rapidly coming to the end of their useful life. By comparison with other towns in the region, the central area has little post war redevelopment; this is an advantage in relation to the need for a comprehensive plan for extensive renewal of the centre to meet the demands of the greatly increased population.

51. Apart from its market and parks, which are major assets, the town also has a number of important facilities including some fine churches, a good theatre, a thriving shopping centre, a well known technical college, a County Cricket headquarters, a Second Division football team and one of the leading rugby football clubs in Great Britain.

6. Population

52. Consideration of past population trends is complicated by the composition of local authority areas. As in many other urban areas the old County Borough boundary excluded the outer suburban and rural fringes of Northampton within which most of the recent population increases have taken place.

53. Thus between the 1951 and 1961 censuses the population in the County Borough increased by only 989—from 104,432 to 105,421—a low figure due to net outward migration. In the same period the parishes within a five mile radius of the centre of Northampton experienced a combined population increase of 6,902, or about 32.5% of their 1951 population. Further population increases have taken place up to a seven mile radius, although within this zone greater influence must be attributed to Wellingborough and the larger parishes such as Roade and Towcester which have fairly strong employment bases.

54. In April, 1965 the County Borough boundary was extended to include the cores of Weston Favell and Duston parishes, and parts of the parishes of Hardingstone, Moulton and Boughton. The 1961 population of the new County Borough area was approximately 117,600 and its age structure displayed a smaller bias towards the older age groups than did the old County Borough area. The mid-1965 population of the new County Borough area was estimated at 121,410.

55. As a basis for preliminary land use assessments a simplified quinquennial projection of the County Borough population and the proposed immigration of 70,000 population by 1981 has been carried out with the following results:

Existing population of 121,400 plus natural increase to 1981	131,600—139,200
Planned intake of 70,000 plus natural increase to 1981	81,600— 83,200
Total	213,200—222,400

These figures do not include the population of the villages within the proposed Designated Area amounting to 6,789. Beyond 1981, prediction is even more difficult. Assuming no additional net migration and 1963 fertility rates the 2001

population would be 270,000, but with less conservative assumptions a population of well over 300,000 is indicated.

7. Topography

56. The search area is drained largely by the River Nene whose main valley runs from west to north east (map 5). Tributary valleys join the main valley at right angles, the Brampton branch rising in the Northampton Uplands being dominant. To the north, the watershed forms an arc through Hannington, Haselbech, Cold Ashby and East Haddon; heights increase from 400 feet in the east to a maximum of 600 feet in the north west. In the south the watershed is formed by low ridges of the eastern extremities of the Cotswolds, rising gently from 300 feet in the east to 500 feet in the west.

57. The extreme southern tip of the search area beyond these ridges comprises south facing slopes drained by the River Tove, a tributary of the River Ouse.

58. Most of the land in the search area lies between 150 feet and 450 feet, only rising higher in the north west and south west. The overall impression is one of rolling countryside with ill-defined ridges in the south but dominated by the wide flood plain of the River Nene and the transverse valleys on its northern side.

8. Rivers and Flood Control

59. Northampton together with a very large part of the search area is within the Welland and Nene River Authority catchment area. The Authority's main functions are land drainage, flood control, pollution prevention, water conservation, fishing licenses and control of river tributaries.

60. Land drainage has been a long standing problem in the Nene and Brampton valleys, river improvement works having been first undertaken during the 1930's. The majority of schemes have been carried out since the last war, and proposals now exist to release land, at present classified as flood plain (map 10) in the Kislingbury and Brampton valleys for future development, by the construction of flood channels and by controlled tipping to raise existing land levels.

61. The Nene is not polluted above the Northampton Sewage Works at Great Billing, but below the outfall the percentage of river water to sewage is $2\frac{1}{2}:1$ instead of the recommended 8:1 dilution, due to overloading of the works from combined system sewers. All new sewers are now provided on separate systems.

9. Landscape

62. The intensive use of most of the land in the area of search for crops and dairying gives a well-kempt landscape pattern. It is essentially an agricultural landscape and mechanisation is leading to scenic changes as hedgerows and hedgerow trees (mainly ash, oak and elm) are removed. This change in the field pattern, creating fields of up to 50 acres in size, has occurred mainly to the south east of Northampton and has given a more open, less intimate character to the landscape in these areas. Landscape of this nature is less suitable for change into urban landscape because of the lack of small copses and mature trees to soften the outline of new building development and give environmental character to a town. In general little new planting is taking place.

63. There are about 50 separate areas of woodland, ranging in size from Salcey Forest and Yardley Chase (each of about 1,500 acres) to isolated copses of a few acres. The main areas lacking woodlands lie immediately south-east and south-west of Northampton, and in the north of the search area. Salcey Forest is the most interesting and attractive woodland—partly because of its access arrangements, but also because of its mixture of tree species and ages. Oak is the dominant tree, with Norway spruce strongly represented. Rotational

fellings is carried out, by "copses". Several woodlands (such as Yardley Chase) are made up of relatively young conifers; though in the most recent planting (around Pitsford Reservoir, for instance) there is a mixture of hard and softwoods. Some of the park and roadside copse planting is in need of regeneration; such areas are of great value scenically but not commercially. Bearing in mind the removal of hedgerow timber, these are areas to which particular attention should be given.

64. In the search area as a whole, the Forestry Commission owns nine woodlands, including the largest (Salcey and Yardley Chase). The Delapre Abbey woodland and that around Pitsford Reservoir are administered by the Borough Council and the Mid-Northants Water Board respectively; the remainder are included in private parkland and farm land. The Forestry Commission policy allows access on foot along forest rides, but not within plantations; and this is also the attitude of some private owners.

65. The villages provide fine features in the landscape and their future character should be carefully considered. The yellow and brown Oolitic limestone is an attractive building material which adds greatly to their character.

66. There are no large rivers within the survey area but the River Nene and its stream tributaries are attractive scenic features and the four large reservoirs are areas of considerable landscape value. They are not all easily visible from nearby roads, however, and access to the waterside is generally limited. The canals provide additional scenic attractions with their locks and bridges forming features of interest.

67. The low ridge and valley system which is a marked feature of the landscape in the survey area creates numerous fine viewpoints. Most of these viewpoints, however, do not lie on existing roads and footpaths so that not all the views can be seen without trespassing on to farm land.

68. The landscape around Northampton is well used for many forms of organised and passive recreation. In addition to fox hunting being very well established in the northern part of the area, angling is popular on reservoirs and canals, sailing takes place on Pitsford Reservoir, riding schools are found around the outskirts of Northampton, and the Aquadrome, constructed from worked out wet gravel pits, forms a major recreational centre for water sports and caravan camping. The canals provide pleasure cruising and the Grand Union Canal forms part of the national network for pleasure cruising suggested by the British Waterways Board. A fine Waterways Museum exists at Stoke Bruerne. Just north of the Museum is the longest canal tunnel (1½ miles) still in use in this country. Other recreational assets within the survey area are the historic buildings within the villages, the network of lanes and minor roads, footpaths and bridleways and the village pubs. The country parks and their magnificent houses attract large numbers of visitors in the summer time and Castle Ashby has an 18th century landscaped park of national importance designed by 'Capability' Brown. Overstone Park also provides scenic interest as well as a wide range of recreational activities. Other sites of regional recreational importance to Northampton lie beyond the survey boundary (e.g. Towcester Race Course and Silverstone Motor Racing Track).

69. The area is rich in archaeological sites, particularly near the Nene Valley, and many of these are of landscape significance. There are a variety of sites of natural history interest in the search area, and these should help to satisfy the outdoor educational and recreational needs of Greater Northampton. The County Naturalists' Trust have drawn attention to nearly 20 sites of particular value in natural history whether for research, education or recreation purposes. Notable among these are the northern section of Pitsford reservoir, a major refuge for wild fowl; Harlestone/Dallington Heath; sections of the old

Ravenstone-Towcester railway, of particular interest for plants, insects and birds; and parts of Salcey Forest. The Trust is also negotiating additional conservation arrangements in some areas.

70. There are no major eyesores within the outer landscape of the survey area and even around Northampton the countryside is fairly free from major intrusions apart from the power station in the Nene Valley and the network of high voltage overhead transmission lines leading from it. There are also some unsightly gravel workings.

10. Geology

71. The rocks in the area of search (map 6) are of Jurassic age, partially covered by Pleistocene and Recent drift deposits. The Jurassic rocks are tilted gently to the south-east, so that in general the older strata outcrop to the north and west. The oldest formation is the Middle Lias, which consists of silts and silty clays up to 100 feet thick, capped by about 10 feet of hard limestone known as the Marlstone. It is exposed between Brockhall and Harpole north of the Nene; and between Nether Heyford and Milton south of the Nene. This is succeeded by the Upper Lias, comprising 150 feet—200 feet of blue shales and clays with thin intercalated limestone bands, which outcrops mainly along the lower valley sides of the Nene and its tributaries. The Inferior Oolite Series contains two main subdivisions. The older of these is the Northampton Sands, which reach a maximum thickness of 70 feet and consist of sands, sandstones and the economically important Northampton Sand ironstone. This part of the Inferior Oolite occupies much of the ground between 250 feet and 375 feet in the area of search. The highest ground in the area is formed by the Lower Estuarine Series (Inferior Oolite); and the Upper Estuarine Series and Gt. Oolite Limestone (Gt. Oolite Series), which together reach a maximum thickness of 70 feet. Both the Estuarines consist mainly of silts and clays, with some sands in the Lower and limestones in the Upper Series. The Gt. Oolite Limestone contains various types of limestones, including oolitic freestones. Approximately south-east of a line between Bozeat and Quinton the Inferior Oolite thins out completely, and the Gt. Oolite Series rests unconformably on the Upper Lias Clay. The Combrash (a thin, rubbly limestone) and Oxford Clay occur in the extreme south-east of the area of search, but are almost entirely masked by thick drift deposits.

72. Many of the interfluvies are mantled with boulder clay, although north of the Nene this drift covering is relatively restricted in area and rarely exceeds 30 feet in thickness. South of the Nene it is much more widespread and thicknesses of 70 feet are common, while it may reach 200 feet around Salcey Forest. Recent deep boring by the Geological Survey has proved up to 100 feet of boulder clay in an irregular channel underlying the Nene valley. Glacial sands and gravels, generally less than 20 feet thick, occur in small patches, sometimes intercalated with the boulder clay. The severe climate of the Pleistocene affected the thick, plastic clays of the Upper Lias, which underlie the more resistant Oolites, and caused such structures as cambering and valley bulging. Recent terrace gravels and alluvium are present in the valleys of the Nene and its tributaries.

11. Mineral Workings

73. The Northampton Sand contains workable ironstones over the major part of the survey area. These range from 6 feet to a normal maximum thickness of 12 feet. The ores are relatively rich for bedded ironstones and contain an average 35% iron, though they tend to be highly siliceous.

74. There is some evidence of periodic working of ironstone from pre-Roman times, but the present pattern of working owes its form to the development of the canal and railway systems in the middle of the last century. The first recorded

modern working was opened on a site close to the Grand Union Canal at Blisworth in 1853. Ironstone is the most important mineral produced in the area but output is declining and a number of pits have been closed since the war. The field is relatively isolated from iron and steel centres and with growing competition from cheap high grade foreign ores, containing up to 70% iron, further decline is possible.

75. The future of the further ironstone interests on the south facing slopes of the Hardinstone ridge must be determined before town expansion is commenced in a southerly direction.

76. Mining takes place around Blisworth, Pitsford and Lamport. Restoration of land is conditional on the issue of working permission and examples of land restored to agricultural use can be seen near Pitsford.

77. Gravel is won from wet pits in the flood plain deposits of the River Nene and from dry pits in the glacial gravels of the area. Further workings in both types of deposits may be anticipated. The flood plain gravels are the more important source of supply and are more restricted in occurrence; hence any future developments should seek to avoid sterilising them. Unlike many other river valleys, the terraces of the Nene within the area of search are not thought to contain workable gravel. Prior extraction of any glacial gravels within areas of future development should be encouraged, since these work dry.

78. Silica sand, for refractory furnace linings, is worked on a small scale in the Lower Estuarine Series to the east of Earls Barton (map 10).

79. The disused wet gravel pits in the Nene valley have considerable potential for recreational use and indeed several pits have already been put to this purpose at Billing Aquadrome. Further development of this kind may be possible, but it will be necessary to prepare a programme for gravel extraction to ensure completion of working at the right time and in the right place and in such a way that the resulting pits can be developed as recreational areas for the town expansion.

12. Agricultural Land Values

80. Most of the area of search is broadly classified by the Ministry of Agriculture as average quality grade III agricultural land (map 7) though there are many minor local variations in land quality within the grades shown on the map.

Grade III land represents average general purpose farmland with limitations due to soil, topography or climate which restrict the choice of crops, timing of cultivations or levels of yields, although such areas include some of the best quality permanent grasslands. There is an area of grade II land to the east of Northampton following the flood plain of the River Nene. It stretches from Weston Favell to Earls Barton in a strip about two miles wide covering about 6,500 acres. At present the land along the river is used for grazing while arable land is confined to the sloping valley sides.

81. The areas to the east and south of Northampton most likely to be developed as the town expansion are both classified as grade IIIB agricultural land, the lowest grading evident in the area of search. This is similar to grade III land described above but with a slightly more limited range of cropping and slightly lower yields than the average grade III classification. Some of the town expansion area might impinge onto the northern edge of the grade II agricultural land in order to achieve an economic and balanced pattern of growth outwards from the existing town.

82. The areas around Harpole and Earls Barton are also average grade III agricultural land.

13. Climate

83. The average annual rainfall of 24.65 inches can be compared with 23.77 inches in East England and 28.40 inches in the Midlands.

84. Cardington is the nearest reliable station providing temperature data. Monthly mean temperatures for Cardington vary little from those of East England and the Midlands; January and February are the coldest months with 3.3°C (37.9°F) and 3.45°C (38.2°F) and July and August the warmest with 16.5°C (62°F) and 16.2°C (61.°F) On comparing the monthly means of the daily maximum and minimum temperatures Cardington shows a greater range for eleven months of the year than East England or the Midlands.

85. Wind data from Cardington indicates that winds are most frequently between south and west and on the average the strongest winds of 8-17 knots, are from this quarter.

86. Information from Raunds gives twenty foggy days per year spread from October to March. Local enquiries show that the low lying valley of the river Nene is prone to early morning mists but that they quickly clear. There are, on average fifteen days, which occur mostly in January and February, when snow is lying at 9 a.m. at Raunds.

14. Utilities and Services

(i) Water Supply

87. It is expected that the Mid-Northants Water Board, together with the Welland and Nene River Authority will be able to supply sufficient water to meet the demands of the expansion area. Additional storage reservoirs will be needed and the location of these is being investigated. It is understood that the Water Resources Board have set up a Committee to consider and report on the long and short term measures necessary to provide the water required in the region, taking into account the various planning proposals put forward in the South East Study.

(ii) Drainage and Sewerage

88. The majority of the villages in the search area are adequately provided with their own or shared sewage disposal works.

89. Almost all the built up area of Northampton is linked to the combined sewerage system which drains to the purification works at Great Billing (map 10). The dry-weather flow design capacity of the works is four and a half million gallons per day, while the actual average daily dry-weather flow is seven and a half million gallons. The works are grossly overloaded, giving rise to frequent odours from overworked tanks. Sulphurous compounds and toxic trade wastes reduce efficiency. Any large scale residential development must, therefore, be preceded by extensions to the existing works or by the building of new works. The present plant was commissioned in 1957, and there are plans for extensions on the existing 554 acre site which is at present only partly utilised and is owned by the Northampton Corporation.

90. The existing sewage works is capable of serving all areas of land likely to be developed.

91. To meet the extra loading that the increased population will place on the sewage disposal works at Billing, a decision must soon be taken on whether to expand the existing works on their present site or retain them as they are and provide for the town expansion needs by the construction of a new works further downstream away from the possible areas of future residential use.

(iii) Electrical Services and Supply

92. The East Midlands Electricity Board supply power to the town and surrounding area from 132 kV grid supply and from the power station in the centre of Northampton.

93. Load supplied to the town is 400 megawatts, one quarter of this by the power station, which is efficient and has fifteen years of life. Load growth rate is 7%, and industry and commerce accounts for 50% of annual consumption. The existing network in the area of search will take double the present loading except for the outer northern parts of the search area; a new gridpoint station in Northampton will shortly be in full operation.

94. A new 132 kV overhead line is proposed between the existing Northampton power station via a proposed switching station at Grendon to Irthlingborough. It will add to the nine existing overhead power lines that radiate outwards across the Nene valley from the existing power station (map 9).

95. The Central Electricity Generating Board is currently proposing to establish a 400/132 kV Switching Station at Grendon which is to be a major infed point with eight lines supplying Northamptonshire from the 400 kV trunk system. The station must be completed by winter 1968 if full security of supplies to the area is to be maintained. Supply required in the area from the trunk system will be 300,000 kw in 1968, rising to 600,000 kw by 1973. All new urban developments in the area could be supplied from Grendon as it is now planned.

(iv) Gas Services and Supply

96. Large mains radiate in all directions along the main traffic routes from the East Midlands Gas Board Works located, like the power station, on the riverside in the heart of Northampton. Extensions to the system are quite feasible in most parts of the search area. The existing works supply an area including both Daventry and Wellingborough, and produce about 13.5 million cubic feet of gas a day for Northampton town. Supplies taken from the grid vary up to 8.5 million cubic feet a day, dependent upon the working rate of the existing gas works, where the plant is being extended. Annual consumption for the town is 2,500 million cubic feet and the growth rate for 1964-65 was nearly 8%.

97. The 18 inch National Methane Pipeline from Canvey Island traverses the area of search parallel and close to the north side of the M1 (map 9). A 10 inch spur to the Northampton Gas Works will shortly be laid along the Rothersthorpe road. The connection to the methane grid will also involve future expansion of the present gas works on adjacent riverside land. A new gas main is under construction between Northampton and Kettering via Wootton.

(v) Oil Supply

98. A national oil pipeline from Canvey to the Midlands is planned for construction in the near future (map 9). It will cross the southern part of the search area, near Stoke Bruerne and run parallel and close to the Grand Union Canal. The pipeline is to be constructed by a petroleum consortium company, and will carry up to 175,000 gallons per hour, and by 1972 have a probable annual flow of 3 million tons. A 12 inch spur is to be laid to Northampton, leaving the main pipeline between Milton Malsor and Rothersthorpe and terminating at the existing West End Shell Mex Depot, where storage facilities are to be enlarged. The depot has hitherto been supplied by rail.

(vi) Telephone and Postal Services

99. Northampton and its hinterland are within the Coventry Telephone Area, and the town and area of search are well served by a telephone network, with exchanges in most of the villages. Provision has already been made in long term plans for the Northampton district based on the programme of population immigration.

100. Postal services for the town and surrounding area are controlled from the Head Post Office in St. Giles Street, Northampton. Additional accommodation will be required.

(vii) *Radio and Television*

101. Twin 150 feet high towers for BBC Television (Channel 3 Vertical T.V. and V.H.F. Sound) are in course of erection on a reservoir site near Boughton on the northern boundary of Northampton.

102. These towers, due for completion this summer, were planned to give improved reception for the existing built up area, and no further towers are at present envisaged.

103. The majority of the built up area is wired for sound relay, while several small areas generally on high ground are also wired for vision, all by a local wireless relay company.

15. Communications

(i) Roads

104. Northampton is served by five major routes (map 8) : A45, A43, A50, A50B and A42B, and will have, within the next two to three years, dual carriage-way links with the M1 motorway four miles to the south via the A50/A50B and to the west via the A45. Thus easy access is provided to London and the south via the A50B, and to the Midlands and the north via the A45. There are two major routes crossing the motorway between these interchange points, the A43 and B4525, and also three minor crossings. In addition, there is a service area approximately midway between the interchanges incorporating a footbridge over the motorway and slipways to the motorway. The remaining major routes are two-lane single carriageways, except the A45, east to Wellingborough, which is a mixture of two, three and dual two-lane carriageways. Improvements to this route provide for a dual two-lane carriageway from Northampton to Wellingborough.

105. The Midlands-East Anglia Motorway suggested by the County Surveyors Association would help to reduce through traffic on the A45 from Wellingborough to the M1, particularly north and west bound traffic via the new route of the A6 also proposed by the Association. However, the expansions of Wellingborough and Northampton and the subsequent interaction between the two will inevitably increase the volume of local traffic using this route.

106. The road network of the existing town is basically a ring and radial system, and at present most roads in the town centre are inadequate for the traffic volumes they are handling at peak hours. In 1962 the total traffic at peak hours using the radial routes into the town centre was considerably in excess of the practical capacity of these routes, and the increase in traffic will have made this position worse over the last four years.

107. In Northampton, a very comprehensive series of Transportation Studies was carried out by the Borough Surveyor in 1962; this will provide much of the basic data required to formulate a general Transportation Model.

(ii) Bus Services

108. Northampton is served by six bus companies. The central area is served by Northampton Corporation Transport and frequent services run as far as the old borough boundary. The use made of the services has steadily deteriorated in the last six years and during 1964-65 it has dropped by 10%. United Counties Omnibus Company serves the rural hinterland of Northampton.

109. Long distance and express services are also run by United Counties Omnibus Company in conjunction with four other private companies; Midland Red and Yorkshire Services, operating basically to the north, Eastern Counties operating to the south, east and west and York Bros. operating to the east.

(iii) Rail Services

110. Northampton lies on one of the main rail lines from London to the Midlands and North (map 8). Northampton Castle is the main line station,

handling passengers and freight, and also acting as a coal distribution depot. A subsidiary station to the south at Far Cotton, acts as a freight and coal depot for the subsidiary "freight-only" lines. From Northampton "freight-only" connections are provided to Market Harborough, Bedford and Wellingborough and it is expected that the last of these lines will be closed in the near future.

111. With the introduction of the new train schedule resulting from the conversion of the London-Liverpool-Manchester route to electric traction, the journey time from London to Northampton has been reduced on average to 79 minutes. British Rail estimate that this will result in a 25% increase in commuters over the next five years, and have increased the number of services by 50%. Northampton Castle Station is also being modernised to handle this expected increase in services and commuters.

(iv) Waterways

112. Some eleven miles of the Grand Union Canal traverse the search area on the south west side of Northampton beyond the motorway (map 8) ; included in this stretch are the Waterways Museum at Stoke Bruerne and the junction with the Northampton Arm near Gayton. This arm is approximately four miles in length and descends one hundred feet through locks to join the River Nene at Cotton End in Northampton.

113. The main canal is of low commercial value, with under 50,000 tons of goods transported per annum, and is one of the three non-profitable canals that the Waterways Board feel should be kept in being commercially with the aid of an annual subsidy.

(v) Air

114. The nearest existing commercial airfields are those at Birmingham (50 miles north west) and Luton (35 miles on the M1 south east) which adequately provide for the present requirements of Northampton (map 2). With the completion of the new M6 Midland link, good communications will be provided to the Birmingham airfield.

115. Sywell Airfield, six miles to the north east of Northampton, already provides to a small extent for private executive and freight trips but if the runway is concreted at a cost of about £350,000 this service could be improved and might be developed as a regular feeder service to the nearby commercial airfields. This improvement would undoubtedly add to the attraction of Northampton for industrialists, but development beyond this status is in doubt due to its proximity to the two established commercial airfields, which are at present operating on a low load factor.

116. Chelveston airfield, seven miles to the east of Wellingborough is a disused military establishment with long concrete runways, but at present there are no plans to develop this facility.

16. Housing

117. There are about 40,000 separate dwellings in Northampton. Of these nearly 17,000 are sub standard houses including 2,838 which are due for slum clearance, and nearly 10,000 which are capable of improvement.

118. In their Housing Programme the County Borough expect to build 1,829 dwellings during the period 1966 to 1971 to meet current demands. In addition the Borough have improvement schemes for rehabilitating areas of Council and privately owned houses.

119. In September, 1965, about 1,000 houses were in course of construction of which about one quarter were being built by the local authority. In addition some 1,700 houses, for which planning permission had been given, had not yet been commenced.

17. Employment

120. In common with surrounding areas the Northampton Employment Exchange Area has been suffering from an acute labour shortage. Unemployment has been running at around 0.5%, and only reached 0.8% in the recession of the early sixties. Registered vacancies currently stand at around 900, and it may be assumed that this figure is an underestimate. In such conditions there is a reciprocal link between employment growth and population growth.

121. From 1956 to 1964 the numbers of jobs in the Employment Exchange Area increased from 62,179 to 68,710; of those located within the County Borough about 42% are concentrated in and around the central area. Such concentration is, of course, undesirable from the traffic point of view and a degree of dispersal would be advantageous.

122. There should be no difficulty in attracting a range of industries to the expanded town in view of the relationship of the site to the London and Birmingham conurbations. It should also be possible to provide office employment.

18. Physical Restraints

(i) Communications

123. The motorway, while being a great commercial asset to the town will also be a barrier because of its high level of continuous noise. This, it is considered, will effectively restrict residential development within a quarter of a mile and possibly within half a mile of the motorway (map 10). As this intervening space will probably be unattractive and uneconomic for farming it could be utilised for industry, school playing fields or general open space. It may also possibly form a barrier in physical and social terms, although this will not affect southwards expansion before 1981.

124. Similarly, a corridor of 'nuisance value' also parallels the railway lines, but this is not so important because the noise is less continuous. There is, however, the additional aesthetic problem of the electrification equipment which can be quite noticeable and this would most affect the areas suggested for expansion where the lines approach Northampton from the south.

(ii) Agricultural Land Values (map 7)

125. Fortunately the lowest agricultural grading of land values in the area of search, grade IIIB, extends almost entirely around the existing County Borough. The exceptions to this in order of value are the areas of grade II land south east of Northampton mostly occupying the flat lands of the Nene valley to the south of the Wellingborough road, the grade IIIA land around Kislingbury and to the south east of Collingtree and the grade III land around Harpole and Great Houghton. The suggested areas for expansion, to the east and south of the town, are mainly on grade IIIB land.

(iii) Climate

126. In the area of search land above about 400 feet and below about 200 feet might be inhospitable and more liable to climatic variations. These areas only occur near Northampton on its northern boundary near Boughton and in the flat lands of the Nene valley. The areas suggested for expansion would not be affected.

(iv) Mineral Workings

127. Considerable ironstone deposits occur to the north of the town in the area between Boughton and Pitsford and to a lesser extent near Hunsbury Camp on the Hardingstone ridge (map 10). The former is a major barrier to expansion to the north but the latter is of less importance and may remain unexcavated; however, the future of the Hardingstone interests must be determined before town

expansion is commenced. Gravel deposits and excavations occur along the Nene valley close to the river and would, therefore, not be affected by suggestions for expansion, but would ultimately contribute potential water recreation areas.

(v) *Topography*

128. The presence of north facing hill slopes and their consequent lack of winter sunlight is not a major constraint near Northampton, except perhaps between Hardingstone and Great Houghton, as the angle of slope is generally fairly low (map 10). In the areas suggested for expansion to the east and south of the town, the only steeper land occurs in some of the transverse minor valleys in the vicinity of Ecton and Earls Barton, which run in a north-south direction and should, therefore, not be deprived of winter sunlight.

129. Flooding is not so much of a problem as it was some years ago, but still occurs along the Nene valley and to a lesser extent along the Brampton valley (map 10). Future river works and improvements may reduce this still further, but extensive reclamation would not form an essential part of expansion to the east or south of the town.

(vi) *Landscape Factors*

130. There are no woodlands or parks close to the existing town which could prevent its expansion in any direction except for Delapre Abbey within the County Borough boundary, already owned by the Corporation and likely to become a town facility, and Harlestone and Dallington Heaths to the north west of the town (map 10). In the areas suggested for expansion to the east of the town, Overstone Park currently used as a girls private school, is a substantial area of wood and parkland but because of its location about a mile to the north of the Wellingborough road neither it nor Sywell reservoir just to the east of the park would present any major obstacle to expansion in this direction.

(vii) *Other Restraints*

131. The only other restraints are caused by the Northampton sewage disposal works located on the grade II land in the Nene valley near Great Billing (map 10); the Electricity Board's Switching Station at Grendon and the nine overhead power lines that radiate across the Nene valley from the Northampton power station (map 9); Sywell Airfield and approaches and Crown land in Yardley Chase and Salcey Forest (map 10). None of these other restraints in any way affect expansion to the east or south of the town, although the proximity of a greatly enlarged sewage works and the possibility of improving Sywell Airfield are matters for some further investigation.

(viii) *Summary*

132. As is shown in map 10 and discussed above, there are no major restraints to town expansion in an easterly, south easterly, southerly or westerly direction, but there are positive difficulties in any northerly direction from north west to north east or in any areas closely associated with the course of the river. It is not considered that either the south easterly area towards Bedford or the westerly area towards Harpole and Daventry have much regional significance in terms of relationships to population and industrial concentrations. In addition the higher land to the south east has a very open and treeless landscape on heavy soils less suitable for urban development.

133. By a process of investigation and elimination, this leaves the areas to the east and south of the town as being the most suitable for future town expansion in terms of regional relationships, topographic and landscape interest and freedom from other physical restraints.

Part C: Designation Recommendations

134. The analysis of expansion possibilities set down in Part A paragraphs 21-33 indicated that a lineal form of growth from the existing town in easterly and southerly directions would be the most satisfactory solution for a number of reasons. Chief among these were the relationships with topography and river valleys and with important lines of communication and concentrations of population and industry at a regional scale.

135. The survey of the area of search, Part B, showed these suggested directions to be feasible for town expansion.

136. The areas in question are currently covered by a County planning policy restricting development to defined "village envelopes" and "key" villages, and preserving the remainder as "green belt" land.

1. Patterns of Settlements—Easterly Expansion

137. The centres of Wellingborough and Northampton are ten miles apart, but their administrative boundaries and their built-up areas are barely six miles apart. Of this six miles gap, considerably more than two miles is occupied with village development reducing the effective open land to less than four miles, distributed in four lengths of about a mile each (map 10).

138. The villages of Moulton, Overstone, Sywell, Wilby and Great Doddington are composed to a large extent of inter-war ribbon development. Moulton almost links up with Northampton; Overstone and Sywell are contiguous and almost link with Moulton, and Wilby and Great Doddington almost link to Wellingborough. The County Council are proposing to expand Earls Barton as one of the four "key" villages located around Northampton.

139. There exists, therefore, a strong case to consider this possible direction of growth as an already partially developed area, so that in the interests of conserving the countryside it would have priority for town expansion.

140. The possibility of further congesting the Wellingborough road which takes traffic to the M1, would be alleviated by the provision of new roads of adequate capacity. These could connect directly with the M1, thus bypassing the existing built up areas.

141. Wellingborough has entered into an agreement with the Greater London Council to accept immigration to increase its size to about 80,000 population. The town is located at the southern end of a line of industrially based settlements straddling the A6 road, including Corby, Kettering, Higham Ferrers and Rushden (map 3). There will be a strong need in the future to improve communications and inter-relationships between this area and Northampton and the M1.

2. Patterns of Settlements—Southerly Expansion

142. To the south of Northampton, in the direction of Bletchley, there is also considerable development taking place or planned for the future. The Minister of Housing and Local Government has published a Draft Designation Order for an area including Bletchley and Wolverton for a new city planned to grow by

70,000 population at 1981, and thereafter by about 150,000 at the end of the century. The centre of this area is about fifteen miles from Northampton (map 2). 143. Road, five miles from Northampton is another of the proposed "key" villages for further expansion and between it and the town are several other rapidly expanding villages in the vicinity of the M1 motorway, including Collingtree, Wootton and Hardingstone.

144. Town expansion towards the south up to the line of the motorway, to include these villages has been suggested in Part A. Long term population growth after 1981 could be provided beyond the motorway in a southerly direction if this proved necessary.

145. With current development pressures already more than usually evident to the east and south of Northampton, and with the increasing regional importance of Wellingborough and Bletchley, there are strong reasons to support growth of town expansion and its associated improved systems of communications in these regionally significant directions.

146. In addition to the two directions for expansion discussed above, there also exists an area to the west of the town, but closely related to it, between the existing County Borough boundary and the M1 motorway, that would be suitable for a limited amount of development concurrently with the remainder of the expansion. The area in question is in the vicinity of Harpole and, to a lesser extent, Kissingbury.

3. Land and Landscape—Easterly Expansion

147. Considering the two directions of growth discussed above, in terms of the land and landscape involved, there are a number of related factors to investigate. These concern the form, drainage, agricultural value and landscape quality of the land.

148. In the case of the easterly expansion, the topography and drainage of the land are very clear and well formed. The Nene valley, about 160 feet above sea level, is a wide, almost flat and relatively treeless area, subject to flooding, although this now occurs less frequently due to river improvement works. There are a number of gravel pits in the valley, some of which are active and some of which are used for recreational purposes. The Northampton sewage works occupy a large proportion of the valley floor. The remainder of the valley floor and the slopes comprise agricultural land mainly used for dairy grazing, of grade II value (maps 7 and 10).

149. The south facing slopes on the north side of the valley, in the vicinity suggested for the town expansion area, are cut by three transverse valleys running approximately north and south, with three tributary streams flowing into the Nene. The three streams are dammed, one forming Sywell reservoir and the others ornamental lakes in Overstone Park, which lies one mile to the north of the Wellingborough road. Parts of the valley slopes are wooded and the landscape generally is attractive and well matured in terms of planting and hedgerows. The agricultural value is generally grade IIB and it is used for arable farming.

150. On the three spurs rising to about 300 feet between the minor valleys are located the villages of Great Billing, Ecton and Earls Barton, overlooking the Nene valley, the last of which is one of the County Council's proposed "key" villages with a present population of about 2,700.

151. The varied topography and good micro-climate favour the development of urban landscape in this area. The area is also well placed for easy access to

the two large zones of countryside of high scenic and recreational value to the north, around Pitsford Reservoir, and south, around Castle Ashby and Yardley Chase.

4. Land and Landscape—Southerly Expansion

152. The area to the south of Northampton has the same overall direction of major topographical features, that is, running from east to west. Immediately to the south of the town there is a well defined ridge of hills rising to about 340 feet dividing the Nene Valley from another broad valley beyond, along which the motorway runs. The motorway valley, which drains in a westerly direction into the Nene Valley, terminates the intervening spur of hills at a point known as Hunsbury Camp, the site of an ancient British settlement commanding views in many directions. The landscape is in part well wooded and mature and in part rather bare; the agricultural value is generally grade IIIB.

153. Beyond the motorway, the land is undulating for about a mile and then rises fairly steeply to a major ridge of hills rising to over 400 feet. Part of the ridge to the east of the Motorway is occupied by Salcey Forest. Just beyond the ridge is Roade and the land then drains to the river Tove which flows into the Ouse. The landscape near the M1 is rather more wooded than in the last area, while the agricultural value ranges between grades III, IIIA and IIIB. This area is likely only to be required for long term population growth after 1981.

154. The area in the vicinity of Harpole and Kislingbury mentioned in paragraph 146 is gently undulating land, and contained to the north by a line of hills rising to 400 feet, with long shallow views across the Nene valley, which here broadens out to form a basin, to the M1 motorway beyond and the ridge of hills referred to in the preceding paragraph. The landscape has many mature trees and hedgerows (map 11), the agricultural quality being grade III around Harpole and grade IIIA in the vicinity of the river Nene.

5. Population Projections

155. From survey work already carried out by the Northampton County Borough Planning Department, it has been estimated that in the period 1965—1980 there will be about 12,000 people affected by slum clearance projects, and that of these about 2,500 will be rehoused on the cleared areas leaving about 9,500 to be accommodated in the new expansion area or in other housing areas. In addition, about 2,500 people may have to be moved as a result of capital works programmed in the period 1965—1980 and another 1,500 will have to be rehoused because of current overcrowding. This gives a total all together of about 13,000 people who will have to be housed during the plan period of the town expansion project.

156. For the purposes of this report this figure of 13,000 is regarded as an addition to the expansion programme.

157. Adopting higher fertility rate assumptions as the basis for the calculation of natural increase, it is projected that the planned immigration of 70,000 people in the period up to 1981 will generate a natural increase of about 13,000 by the end of the period. In addition, the existing population of 120,000 is expected to generate its own increase of about 18,000 by 1981.

158. This gives a total population growth from planned immigration and natural increase of about 102,000 by 1981, which together with the overspill population from the existing County Borough brings the population to be accommodated in the new expansion area up to 115,000. The total population of the County Borough and the expansion will then be 222,000. Further unplanned immigration and natural increase of the resident population may raise this figure to about 300,000 by the end of the century.

159. If continued population pressures in the South East as suggested in Part A paragraph 14 cause the planned immigration programme to be extended beyond 1981, as will be possible with the "open-ended" lineal growth pattern proposed, then the figure of 300,000 could be greatly exceeded.

6. Urban Land Use Needs

160. The area of land required for the various uses for an additional population of 115,000 is roughly as follows :

	Acres
Housing area at 40 ppa.	2,875
Industry	1,000
District Centres	200
Education	650
Open spaces at 12 acres/1,000 pop.	1,380
Major Roads (incl. landscaping)	700
Miscellaneous (utilities, health, etc.)	350
	7,155

161. It is estimated that about 44% of the incoming population will be employed, a total of 50,000 workers. Of these, it is assumed that about 50% will be in manufacturing industry and 50% in service and primary industries. About a third of all workers employed in service industries may be located in areas zoned for manufacturing industries. This gives a total of about 66% of the working population being employed in these areas, which, at an average density of about 30 workers per acre gross, would result in nearly 1,000 acres for for industry.

162. About 200 acres would be distributed between district centres providing for convenience shopping and new or dispersed commercial uses. Each centre would have a catchment area of between 25,000 and 60,000 population, depending on the number of centres provided.

163. Some 1,380 acres will be required for public open space and playing fields within the town expansion urban area and in addition there will be a great need for areas of high landscape value to be accessible to the public in the rural areas around Northampton. With the continuing trend towards increasing leisure time and recreational activities, combined with the increase in car ownership there will be pressure on rural areas adjacent to major towns to provide the facilities necessary to supply the needs of a mobile population. This is a matter to which attention will be given in further studies on the urban plan.

7. Basic Plan

164. Map 12 illustrates in diagrammatic form the proposed pattern of land use and main communications for the expansion of Northampton.

165. The land to the east of Northampton occupied by the urban expansion areas is generally of a gently undulating ridge and valley form. The valleys provide linear public open space and recreational areas within which the secondary schools are located and the valley slopes and ridges are occupied by the residential areas and shopping centres.

166. The flatter lands of parts of the Nene valley and of the higher ground to the north are utilised for the major industrial areas.

167. The land to the south of Northampton proposed to be used for town expansion presents a gentle south facing slope towards the M1 motorway.

This is used primarily for residential and ancillary purposes, with industrial areas located on flatter land at the base of the slopes and with schools and school playing fields forming a barrier between the expansion area and the motorway. Hunsbury Camp and parts of the Hardingstone Downs are retained as a ridge walkway.

168. Analysis of land use distribution and road networks has resulted in a flexible pattern involving three strands of development along the line of growth. Many journey to work movements will be relatively evenly dispersed in transverse directions outwards from the spine to the edges of the linear system and the same principle can be applied in broad terms within the existing town. Inter-town traffic movements and journeys from the expansion area to Northampton will occur longitudinally along the linear system on high speed roads and will be separate from the short transverse movements.

169. Public transport would also be organised on lines of transverse and longitudinal movement.

170. In the application of transportation policies based on traffic generation from a balance system of land use distribution in a linear form, it is important to control future developments outside the expansion area. These would include the growth of outlying villages or of the outer suburbs of Northampton which could overload parts of the system, or development in the path of the linear expansion which does not conform to the general principles and organisation of the basic plan.

8. Designation Area

171. The site recommended for designation covers an area of 23,615 acres including 10,241 acres forming the existing County Borough of Northampton. It comprises land sufficient for the planning of town expansion needs up to the year 1981. Broadly, the recommended site extends from the existing County Borough boundaries in an easterly direction as far as Sywell reservoir and in a southerly direction to the M1 motorway and includes parts of Brixworth, Wellingborough and Northampton Rural Districts.

172. Land for further expansion to meet population growth after 1981 will be required beyond the eastern and southern boundaries mentioned above, and it is important that this land is not developed in the interim period for purposes not in accordance with the general principles and directions of growth outlined in this report.

173. The proposed Designation Area is in excess of the net amount of land required for the various land uses for the expanded town in addition to the area of the existing County Borough. The boundary incorporates additional land, however, to include:

- (a) villages which are in close proximity to the County Borough and the expansion areas, the development of which is critical in respect of their relationship to the overall plan. These are as follows:

	Urban area	1961
	acres	Population
Moulton	225.4	3,424
Overstone	108.9	624
Sywell	12.8	556
Little Billing	24.5	1,047
Great Billing	40.9	
Ecton	41.3	461

Little Houghton	46.9	409
Great Houghton	47.9	301
Hardingstone	125.6	1,488
Wootton	101.8	1,649
Collingtree	40.7	254
Other built up areas	112.3	
	929.9	10,213

(b) considerable areas of land outside the County Borough which are already developed or are unsuitable for building but which occur within the expansion areas. These are as follows:

Railway property	21.1
Sywell Airfield	291.3
Irrigation Farm	520.3
Extension to Sywell Reservoir	169.8
Ironstone mining permission	31.5
	1,034.0 acres

(c) areas of special amenity or functional value such as private parks and woodlands which should be included because of their special relationship to the pattern of expansion, totalling about 1,218 acres.

(d) the flood plains of the river Nene, including various sand and gravel areas and Billing Aquadrome, which should be comprehensively planned as an area of recreational development, amounting to about 2,060 acres.

The above items (a)-(d) amount to a total of 5,242 acres of land within the proposed Designation Area which is not available for new urban development.

174. The principal areas of land included in the proposed Designation Area can be summarised as follows:

Existing County Borough	10,241
New land use needs	7,155
Existing villages	930
Other developed land or land unsuitable for building	1,034
Areas of special amenity value	1,218
Flood plains	2,060
Total	22,638 acres

175. Details of the recommended site are as follows. From the County Borough boundary on the north side of the town, the Designated Area boundary extends from Kingsthorpe along Boughton Green Road toward Boothville. About $\frac{1}{4}$ mile before the junction with Northampton Lane South, the boundary turns north eastwards along field boundaries around the built-up area of Moulton village until it joins the Kettering road which it follows north eastwards for about $\frac{1}{4}$ mile to a point north of Overstone where it follows field boundaries approximately half a mile to the north of the road through Overstone. From Sywell Lodge the boundary turns south eastwards along the road to Sywell village and then turns to follow the northern boundaries of Sywell Airfield. From Woodbridge Farm the boundary follows the stream along Sywell Bottom and then turns westwards towards Sywell village. From the village the boundary proceeds along the eastern side of New Hayes Wood to Sywell Reservoir, then follows the western edge of the Reservoir and the course of the stream below the reservoir until it joins the river Nene. At this point the boundary proceeds

another half mile to the south to the Northampton-Wellingborough railway where it follows the line to Little Houghton crossing. From here the boundary follows the road towards Little Houghton, includes the grounds of Little Houghton House and the village of Little Houghton and proceeds along field boundaries to a point just to the south of Great Houghton. It then follows field enclosures to a point just to the east of Hardingstone where it turns southwards along field boundaries to the east of Wootton to Wootton Brook. The boundary follows Wootton Brook westwards to the A508 road which it follows to the interchange on the M1 motorway. It then runs along the motorway north-westwards to the Rothersthorpe road which it follows north eastwards for about half a mile and then turns north along field boundaries across the valley of the Nene to the east side of Upton Park. From here the boundary skirts the east side of the Park to the A45 Daventry road where it turns eastwards to follow the County Borough boundary.

Expansion of Northampton

Consultant's proposals for designation

A report to the Minister of Housing and Local Government by
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Chartered Architects and Town Planners
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July, 1966



London Her Majesty's Stationery Office 1966

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